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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/647,899 | 08/25/2003 | Brady Volpe | SIGT:006 | 2335 |
| ROSSI & ASSOCIATES P.O. Box 826 Ashburn, VA 20146-0826 | | | EXAMINER SINKANTARAKORN, PAWARIS | |
| | | | ART UNIT 2616 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/647,899 | | VOLPE ET AL. | |
| | Examiner | | Art Unit | |
| | Pao Sinkantarakorn | | 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 - Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 - Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some * c) ☐ None of:
 - 1. ☐ Certified copies of the priority documents have been received.
 - 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1- 13 are objected to because of the following informalities:

Regarding claim 1 line 8, the phrase "upstream CM signal" should be rewritten as ---upstream Cable Modem (CM) signal---. The same is true for claim 5, 7, and 11.

Regarding claim 2 line 3, the term "CMTS" should be rewritten as ---Cable Modem Termination System (CMTS)---. The same is true for claim 8.

Regarding claim 4 line 3, the phrase "an Modulation Error Ratio" should be rewritten as ---a Modulation Error Ratio---. The same is true for claims 6, 10, and 12.

Regarding claim 13 line 7, the term "UP" should be rewritten as ---US---.

Claims 3 and 9 are then objected because they depend on the objected claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daruwalla et al. (US 6,693,878) in view of Williams et al. (US 2002/0159513).

Regarding claims 1 and 7, Daruwalla et al. disclose an apparatus for measuring upstream signal quality of cable modem communications in a DOCSIS network, the apparatus comprising:

downstream analysis means for analyzing a downstream communication channel of the DOCSIS network (see column 10 lines 22-34, CMTS sends an SID assignment to CM, the CMTS analyzes the downstream channel and sends the SID assignment to CMs via downstream channel) and generating a relational database containing MAC addresses and corresponding SID addresses associated with specific cable modems provided in the DOCSIS network (see Fig 5-7, column 9 lines 41-67, column 10 lines

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39-58, and column 11 lines 51-56, the CMTS assigns SID to each cable modem in the network, wherein at least one SID is assigned to a single MAC address);

upstream analysis means for analyzing an upstream communication channel to identify upstream CM signal corresponding to a specific cable modem (see column 13 lines 31-35, the CMTS examines the packet transmitted from a CM to identify the particular SID of that CM).

Daruwalla et al. do not disclose the step of identifying upstream CM signal based on timing information derived in part from the relational database. However, the invention of Williams et al. from the same or similar field of endeavor disclose an apparatus, wherein a CMTS configures a plurality of CMs, each with a unique timeslot on their assigned channel (see paragraphs 32 and 38, a CMTS configures each CM, associated with a unique MAC address and SID, with a unique timeslot and once a CM transmits at a certain timeslot, the CMTS is capable of identifying which CM with a unique MAC address and SID transmits a signal).

Thus, it would have been obvious to the person of ordinary skill in the art to implement a method for assigning a unique timeslot to each CM with a unique MAC address and SID as taught by Williams et al. into the apparatus for analyzing upstream and downstream channels of cable modem communications.

The motivation for implementing a method for assigning a unique timeslot to each CM with a unique MAC address and SID is that it increases the efficiency of the apparatus.

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Regarding to claims 2 and 8, Daruwalla et al. disclose an apparatus, wherein the downstream analyzes range-response frames originating from a CMTS provided in the DOCSIS network, and correlates unique cable modem MAC addresses to CMTS assigned unique SID addresses to generate the relational database (see column 10 lines 22-34 and column 11 lines 51-56).

Daruwalla et al. do not disclose the down-converting and demodulating steps. However, the invention of Williams et al. from the same or similar fields of endeavor disclose an apparatus, wherein CMs down-convert and demodulate RF downstream transfers (see paragraph 31 lines 7-11).

Thus, it would have been obvious to the person of ordinary skill in the art to implement an apparatus, wherein CMs down-convert and demodulate RF downstream transfers as taught by Williams et al. into the apparatus for analyzing upstream and downstream channels of cable modem communications of Daruwalla et al.

The motivation for implementing an apparatus, wherein CMs down-convert and demodulate RF downstream transfers is that it increases the efficiency of the apparatus.

Regarding to claims 3 and 9, Daruwalla et al. disclose an apparatus, wherein the downstream analysis means includes means for examining downstream MAP messages originating from the CMTS (see column 10 lines 22-34).

Daruwalla et al. do not disclose an apparatus, wherein the downstream analysis means determines timing information corresponding to a respective CM based on information contained in the MAP messages and the relation database. However, the invention of Williams et al. from the same or similar fields of endeavor disclose an

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apparatus, wherein a CMTS configures a plurality of CMs, each with a unique timeslot on their assigned channel (see paragraphs 32 and 38, each CM is assigned a unique timeslot and Service ID).

Thus, it would have been obvious to implement an apparatus, wherein the downstream analysis means determines timing information corresponding to a respective CM based on information contained in the MAP messages and the relation database as taught by Williams et al. into the apparatus for analyzing upstream and downstream channels of cable modem communications of Daruwalla et al.

The motivation for implementing an apparatus, wherein the downstream analysis means determines timing information corresponding to a respective CM based on information contained in the MAP messages and the relation database is that it lowers error rates.

6. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daruwalla et al. in view of Williams et al. as applied to claim 1 above, and further in view of Wolf et al. (US 6,954,420).

Regarding to claims 4 and 10, Daruwalla et al. in view of Williams et al. disclose all the subject matter of the claimed invention except the apparatus, wherein the upstream analysis means calculates a Modulation Error Ratio.

The invention of Wolf et al. from the same or similar fields of endeavor disclose an apparatus for calculating mean or maximum modulation error ratio of a channel (see column 4 lines 38-56).

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Thus, it would have been obvious to the person of ordinary skill in the art to implement an apparatus for calculating mean or maximum MER of a channel as taught by Wolf et al. into the apparatus for analyzing upstream and downstream channels of cable modem communications of Daruwalla et al. in view of Williams et al.

The motivation for implementing an apparatus for calculating mean or maximum MER of a channel is that it increases the reliability of the apparatus.

7. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denney et al. (US 2003/0058837) in view of Wingfield (US 7,103,047).

Regarding claims 5 and 11, Denney et al. disclose an apparatus for measuring upstream signal quality of cable modem communications in a DOCSIS network, the apparatus comprising:

control means for entering at least one of a selected MAC addresses and a selected SID addresses (see paragraphs 65-67, a burst receiver passes the burst to classifier after it receives an upstream burst, wherein each upstream burst is identified by an SID); and

upstream analysis means for analyzing CM burst packets on an upstream channel of the DOCSIS network (see paragraph 66, classifier determines an identifier or SID for the burst), wherein the upstream analysis means analyzes only selected CM burst packets having a MAC address or SID address that matches the selected MAC address of selected SID addresses (see paragraph 67, classifier queries priority Look-

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Up Table to match the SID. If a match is found, priority LUT returns a priority indicator for the SID to the classifier).

Denney et al. do not disclose an apparatus, wherein the upstream analysis means rejects all packets not matching the MAC or SID criteria. However, the invention of Wingfield from the same or similar fields of endeavor disclose an apparatus for rejecting the packets that are not matched with any of the packet IDs in a list (see column 6 lines 40-50, the NULL packet, which is not in the packet ID list, is discarded).

Thus, it would have been obvious to the person of ordinary skill in the art to implementing an apparatus for rejecting the packets that are not matched with any of the packet IDs in a list as taught by Wingfield into the apparatus of Denney et al.

The motivation for implementing an apparatus for rejecting the packets that are not matched with any of the packet IDs in a list is that it lowers the processing time because unmatched packets are discarded.

8. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denney et al. in view of Wingfield as applied to claims 5 and 11 above, and further in view of Wolf et al.

Regarding claims 6 and 12, Denney et al. in view of Wingfield disclose all the subject matter of the claimed invention except the apparatus, wherein the upstream analysis means calculates a Modulation Error Ratio.

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The invention of Wolf et al. from the same or similar fields of endeavor disclose an apparatus for calculating mean or maximum modulation error ratio of a channel (see column 4 lines 38-56).

Thus, it would have been obvious to the person of ordinary skill in the art to implement an apparatus for calculating mean or maximum MER of a channel as taught by Wolf et al. into the apparatus of Denney et al. in view of Wingfield.

The motivation for implementing an apparatus for calculating mean or maximum MER of a channel is that it increases the reliability of the apparatus.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daruwalla et al. in view of Denney et al.

Regarding claim 13, Daruwalla et al. disclose an apparatus for measuring signal quality of cable modem communications in a DOCSIS network, the apparatus comprising:

a downstream (DS) RF input port (see Fig 11 connection between 1106 and 1107), and upstream (US) RF input port (see Fig 11 connection between 1112 and 1116);

a coupling device coupled to receive a DS signal applied to the DS RF input port, an US signal applied to the US RF input port;

a US tuner & demodulator coupled to the coupling device means (see Fig 11 reference numeral 1106);

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a media access control (MAC) processor coupled to the DS tuner and modulator and the US tuner and demodulator (see Fig 11 reference numeral 1104); and

a control processor coupled to the MAC processor (see Fig 11 reference numeral 1150).

Daruwalla et al. do not disclose an apparatus comprising: a combined DS/US RF input port; a filter device coupled to the DS/US RF input port, wherein the filter device separates a combined DS/US RF signal applied to the DS/US RF input port into a filtered DS signal and a filtered US signal; and a DS tuner and demodulator.

However, the invention of Denney et al. from the same or similar fields of endeavor disclose an internodal infrastructure, which provides interconnectivity among CMTS and CMs via upstream/downstream channel (see column 37-39 and Fig 1 reference numeral 105, reference numeral 105 acts as a splitter which separates the upstream and downstream signals and provide upstream signals to the US PHY and downstream signals to the DS PHY) and it is well known in the art to implement a DS tuner and demodulator.

Thus, it would have been obvious to the person of ordinary skill in the art to implement an apparatus comprising: a combined DS/US RF input port; a filter device coupled to the DS/US RF input port, wherein the filter device separates a combined DS/US RF signal applied to the DS/US RF input port into a filtered DS signal and a filtered US signal; and a DS tuner and demodulator into the apparatus of Daruwalla et al.

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The motivation for implementing an apparatus comprising: a combined DS/US RF input port; a filter device coupled to the DS/US RF input port, wherein the filter device separates a combined DS/US RF signal applied to the DS/US RF input port into a filtered DS signal and a filtered US signal; and a DS tuner and demodulator is that it increases flexibility of the system by allowing an extra port to support upstream/downstream traffic.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dale et al. (US 2004/0085976) and Beser (US 6,807,193) are cited to show apparatus/method considered pertinent to the claimed invention.

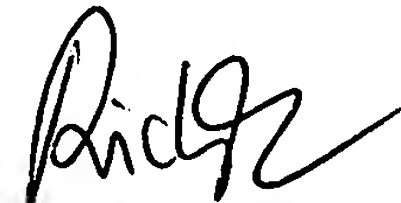
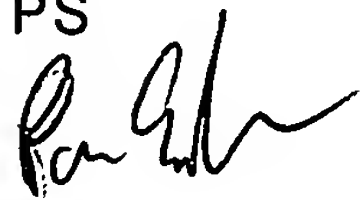
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pao Sinkantarakorn whose telephone number is 571-270-1424. The examiner can normally be reached on Monday-Thursday 9:00am-3:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PS



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